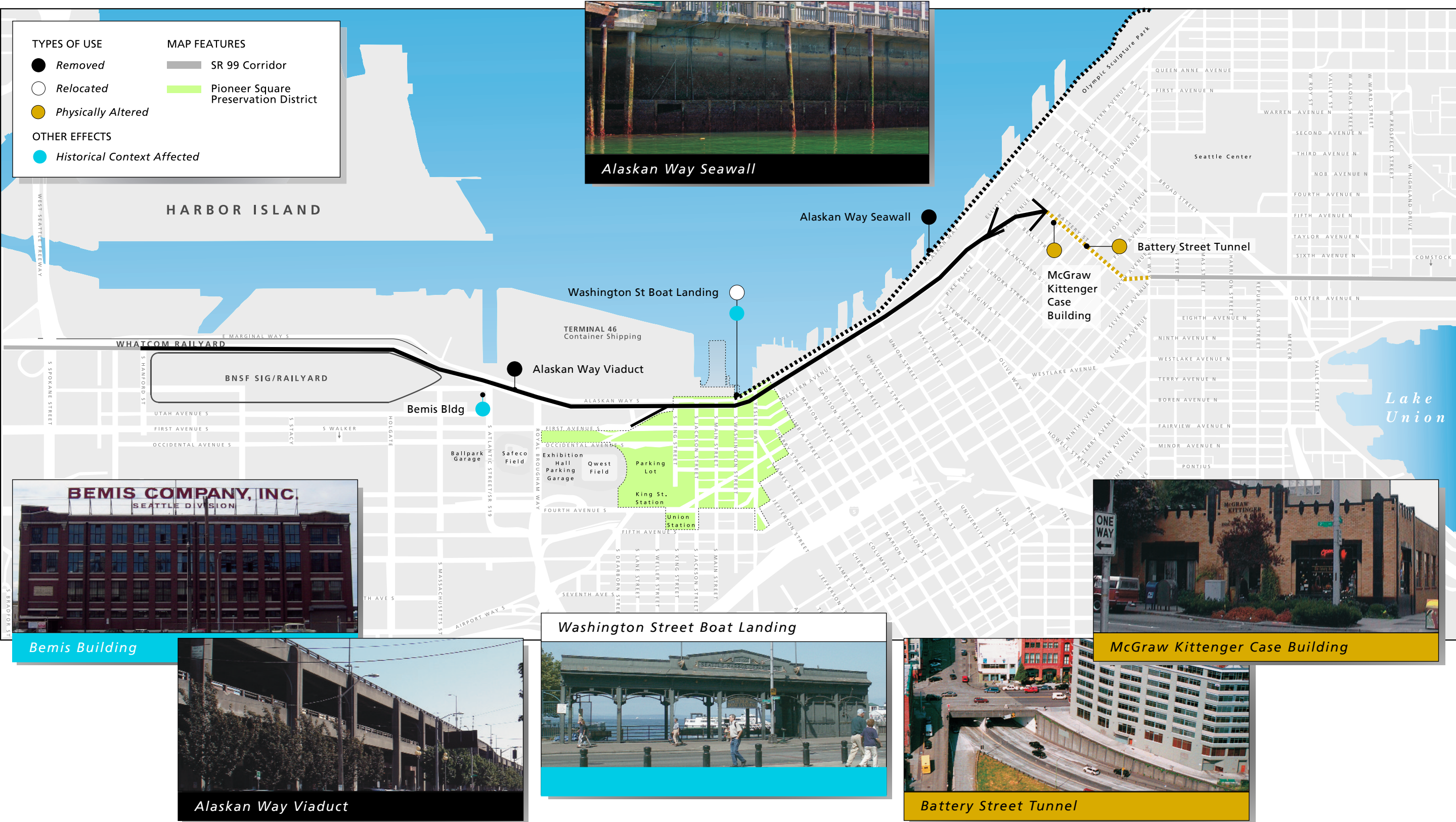


REFERENCE PAGES

Section 4(f) Resources Affected
by the Alaskan Way Viaduct and Seawall Replacement Project



Alaskan Way Seawall



Bemis Building



Alaskan Way Viaduct



Washington Street Boat Landing



McGraw Kittenger Case Building



Battery Street Tunnel

SECTION 4(F) EVALUATION

What is Section 4(f)?

Section 4(f) refers to a section of the Department of Transportation Act of 1966 that established the policy “that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.” (These requirements are codified in federal law at 49 U.S.C. 303.)

Section 4(f) requires that transportation projects with federal involvement avoid use of:

- Park and recreation land (specifically publicly owned land of a significant public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance), or
- Historic resources (specifically a historic site of national, state, or local significance) on or eligible for the National Register of Historic Places.

In discussing 4(f), the term “use” may mean either a direct use or constructive use. A direct use occurs when land is permanently incorporated into a transportation facility or when there is a temporary occupancy of land that is adverse to a 4(f) resource. Temporary occupancy of a property is not considered adverse under the Section 4(f) statute if the following conditions are satisfied: (1) duration must be temporary (i.e., shorter than the period of construction); (2) the scope of work must be minor, with only minimal changes to the protected resource; (3) there are no anticipated permanent adverse physical impacts, or interference with the activities or purposes of the resource on either a temporary or permanent basis; (4) the property being used must be fully restored to a condition which is at least as good as that which existed prior to the proposed project; and; (5) there must be documented agreement of the appropriate officials having jurisdiction over the resource regarding the above conditions. Constructive use occurs when a project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under Section 4(f) are substantially impaired.

Effects to Section 4(f)Resources

- Removed
- Relocated
- Physically Altered
- Historical Context Affected

Name	Owner	Section 4(f) Status	Primary Function	Preferred Tunnel Alternative				Elevated Structure Alternative			
Location				REMOVED	RELOCATED	PHYSICALLY ALTERED	PROXIMITY IMPACT	REMOVED	RELOCATED	PHYSICALLY ALTERED	PROXIMITY IMPACT
Bemis Building ¹ 55 - 65 S. Atlantic Street	Private	National Register Eligible	Studios								
Alaskan Way Seawall Along Alaskan Way	Public City of Seattle	National Register Eligible		●				●			
Alaskan Way Viaduct Above Alaskan Way on waterfront	Public WSDOT	National Register Eligible	Transportation	●				●			
S. Washington Street Boat Landing S. Washington Street at Alaskan Way	City of Seattle	Park and Recreational Facility Pergola Structure National Register	Views Relaxation Fishing		○				○		
McGraw Kittenger Case Blu Canary/MGM Building 2330 First Avenue	Private	National Register Eligible				●				●	
Battery Street Tunnel Under Battery Street between First Avenue and Denny Way	Public (WSDOT or City of Seattle)	National Register Eligible	Transportation			●				●	

¹ Building would remain in its current location but access would be affected.

In order to make use of such lands or resources, the Federal Highway Administration (FHWA) must determine that:

- There is no feasible and prudent avoidance alternative to using that land; and
- The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use.

How is it determined that there are no alternatives to use of the Section 4(f) resource?

To demonstrate that there is no feasible and prudent avoidance alternative to the use of Section 4(f) land or resources, an evaluation must address:

- Location alternatives; and
- Design shifts that avoid the Section 4(f) land.

Avoidance is required unless the alternatives that would not involve Section 4(f) resources result in unique problems. Unique problems are present when there are truly unusual factors or when the costs or community disruption reach extraordinary magnitude.

How were alternatives selected?

For this project, a number of alternatives were considered in an initial screening process. These were narrowed to five alternatives in the Draft Environmental Impact Statement (EIS) published in March 2004.

This evaluation considers two alternatives developed since the Draft EIS that meet the purpose of and need for the project.

What is the project’s purpose and need?

In April 2005, the lead agencies amended the project’s purpose and need statement to address the need for

access and safety improvements to the State Route (SR) 99 Corridor north of the Battery Street Tunnel.

Purpose of the Proposed Action

The main purpose of the proposed action is to provide a transportation facility and seawall with improved earthquake resistance. The project will maintain or improve mobility, accessibility, and traffic safety for people and goods along the Alaskan Way Viaduct Corridor as well as improve access to and from SR 99 from the Battery Street Tunnel north to Roy Street.

Need for the Proposed Action

The Alaskan Way Viaduct and Alaskan Way Seawall are both at the end of their useful life. Improvements to both are required to protect public safety and maintain the transportation corridor. Because these facilities are at risk of sudden and catastrophic failure in an earthquake, FHWA, Washington State Department of Transportation

(WSDOT), and the City of Seattle seek to implement these improvements as quickly as possible. Improvements between the Battery Street Tunnel and Roy Street will be needed to improve access to and from SR 99 and to improve local street connections once the viaduct is replaced. FHWA, WSDOT, and the City of Seattle have identified several underlying needs the project will address:

- Seismic vulnerability
- Traffic safety
- Roadway design deficiencies
- Bicycle and pedestrian safety and accessibility

The complete purpose and need statement is found on page 122 in this document.

What alternatives were considered for this Section 4(f) evaluation?

Two Build Alternatives are considered in the Supplemental Draft EIS: the Tunnel Alternative (Preferred Alternative) and the Elevated Structure Alternative. These alternatives are described in more detail in Chapter 4. The following is a summary of the main features of the alternatives.

Tunnel Alternative (Preferred Alternative)

Under the Tunnel Alternative, several design choices are under consideration for the configuration of facilities in various portions of the corridor. There are two potential designs for the tunnel in the central section of the corridor:

- Stacked tunnel (preferred)
- Side-by-side tunnel

Both designs would have three lanes in each direction. The tunnel would extend from approximately S. Dearborn Street to Pine Street. In addition to the tunnel portion of the corridor, there are several design choices in different sections of the corridor.

In the south section, there are two design choices:

- The Reconfigured Whatcom Railyard choice is part of the preferred alignment. SR 99 would remain in its current alignment between the Burlington

Northern Santa Fe Railway Company (BNSF) Seattle International Gateway (SIG) Railyard on the east and the Whatcom Railyard to the west, with a short bridge over the new tail track and connection between the railyards.

- The Relocated Whatcom Railyard choice would shift SR 99 to the west into the site of the existing Whatcom Railyard and shift the railyard to the east to occupy the existing highway right-of-way next to the BNSF SIG Railyard. The SR 99 roadway would be at-grade.

From Union Street to Steinbrueck Park at about Virginia Street, the following design choices are considered for structures above the roadway:

- The Steinbrueck Park Walkway choice (part of the Preferred Alternative) would consist of a lid over the entire roadway to just past Pine Street, and then it would become a 20-foot-wide pedestrian walkway east of and elevated above the level of the SR 99 roadway.
- The Steinbrueck Park Lid choice would construct a lid covering the entire width of the roadway from the north end of Victor Steinbrueck Park to the waterfront, approximately 560 feet in length.

The central section of the corridor also includes the following design choices:

- The SR 99 Under Elliott and Western Avenues choice (part of the Preferred Alternative) would cross over the BNSF railroad tunnel and enter a cut section below Elliott and Western Avenues, which crosses above SR 99 at grade. This choice requires modification to the Battery Street Tunnel to meet the existing tunnel portal about 12 feet below the existing tunnel floor. To accommodate the new roadway, the tunnel floor would be substantially lowered for about 450 feet into the tunnel.
- The SR 99 Over Elliott and Western Avenues choice would cross over the BNSF railroad tunnel and over Elliott and Western Avenues on a side-by-side aerial structure slightly wider than the existing structure and would connect with the Battery Street Tunnel similar to the existing configuration.

Within the Battery Street Tunnel, the vertical clearance in the tunnel would be increased to 16.5 feet. Fire/life safety improvements (which include seismic upgrades and access and egress improvements) would be added. Ventilation buildings would be located above each tunnel portal. The Lowered Aurora design choice for the Battery Street Tunnel would add modifications to the curves at both the south and north portals.

North of the Battery Street Tunnel, there are two design choices for SR 99:

- The Partially Lowered Aurora choice (part of the Preferred Alternative) would provide improvements from Denny Way to Aloha Street. From Denny Way to Republican Street, SR 99 would be lowered in a retained cut with Thomas and Harrison Streets crossing over Aurora Avenue N. Mercer Street would continue to cross under Aurora but would be reconfigured to a two-way street. In addition, Roy Street would be reggraded to connect to SR 99.
- The Lowered Aurora choice would place SR 99 in a retained cut between Denny Way and Comstock Street with Thomas, Harrison, Republican, Mercer, and Roy Streets crossing over the highway.

Elevated Structure Alternative

From S. Holgate Street to south of S. Atlantic Street, the Elevated Structure Alternative includes the same design choices for the Reconfigured or Relocated Whatcom Railyard.

The roadway would become a side-by-side aerial structure south of S. Atlantic Street to near S. King Street, where it would transition to a new wider double-level aerial structure. Between Union Street and about Pine Street, the double-level stacked structure would transition to a side-by-side structure as it climbs the hill to the Battery Street Tunnel. There would be no lidded structure (over the roadway) or walkway from Steinbrueck Park at the north end of the Pike Place Market to the central waterfront along Alaskan Way below. The Elliott and Western Avenues ramp configuration for the Elevated Structure Alternative would be the same as the existing ramps. SR 99 would then pass over Elliott and Western Avenues.

The Battery Street Tunnel would be upgraded with fire/life safety improvements, and the vertical clearance would be increased to 16.5 feet by lowering the existing roadway. Ventilation buildings would be located above each tunnel portal.

SR 99 would be lowered and widened with the Partially Lowered Aurora design choice, as described above under the Tunnel Alternative.

What local, state, and federal agencies were coordinated with to determine what park and recreation land and historic resources would be affected?

Section 4(f) requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Departments of Agriculture and Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f).

Coordination for the Section 4(f) review included coordination meetings, field visits, and preliminary memoranda outlining Section 4(f) issues with representatives of FHWA, WSDOT, the City of Seattle, the State Historic Preservation Officer (SHPO), and the National Park Service (NPS).

What is Section 106, and how does it affect the way we evaluate park and recreation land and historic resources?

Section 106 of the National Historic Preservation Act requires agencies to consider the effects of federal actions on historic properties and archaeological resources. In compliance with Section 106 requirements, the project team has and will continue to consult with the SHPO, tribes, and other interested parties in developing mitigation measures. As part of our consultation with SHPO we will do the following:

- Develop agreements to address how we will deal with known and unknown effects to historic and cultural resources. Any historically significant discoveries encountered during construction would be subject to Section 4(f) provisions.

- Develop resource-specific Memoranda of Agreement to document and mitigate effects. The project has already begun documenting known historic effects to the viaduct, seawall, and the Washington Street Boat Landing. Additionally, the project partners are conducting in-depth archaeological studies of the area to better understand where cultural sites or sensitive cultural resources may be located.

Depending on the type of resource, mitigation of adverse construction effects can involve documentation, excavation, and in-place preservation or relocation. Other appropriate measures will be developed on a case-by-case basis with the SHPO. When the parties agree on how the adverse impacts will be resolved, a Memorandum of Agreement will be signed and implemented. This agreement will outline mitigation measures, identify responsible parties, and bind the signatories. In consultation with the SHPO and tribes, the project team will also develop an inadvertent discovery protocol and construction monitoring plan. The Section 106 documentation will be included in the Final EIS.

Park and Recreation Resources

Park and recreation facilities in the project area were identified with the cooperation of the City of Seattle Parks Department, the Port of Seattle, and the Seattle Department of Planning and Development (DPD, formerly Design, Construction and Land Use).

Local plans and guidelines that address park and recreation policies and provide a framework for the evaluation of use were consulted in development of this report. A complete list of resources is found in the *2004 Draft EIS Appendix H, Parks and Recreation Technical Memorandum*.

Collected information was confirmed by site reconnaissance and meetings with local jurisdictions, including:

- City of Seattle, Department of Parks and Recreation
- City of Seattle, Department of Transportation
- Seattle Aquarium
- City of Seattle, DPD
- Seattle Office of Arts and Cultural Affairs

- Port of Seattle
- WSDOT
- Washington State Ferries

As a result of consultation with the agencies listed above, park and recreation facilities within three to five blocks of the proposed project facilities were identified for further analysis as potentially affected by the alternatives.

Historic Resources

Coordination meetings were held with:

- The State Historic Preservation Officer
- The City of Seattle Preservation Officer
- The WSDOT Cultural Resources specialist
- FHWA

Through these meetings, agreement was reached on the Area of Potential Effect and the overall approach to the survey and inventory process. Information on potential use was shared with these agencies as project engineering progressed. Detailed coordination on eligibility for the National Historic Register involved coordination with Craig Holstine of WSDOT.

A more complete discussion of coordination on historic resources is found in the *2004 Draft EIS Appendix L* and *2006 Supplemental Draft EIS Appendix L, Historic Resources Technical Memoranda*.

National Park Service

Consultation with the NPS consisted of review of NPS comments and a meeting with NPS staff. Issues identified by NPS included:

- Impacts to public access, especially to Piers 54 through 57.
- Impacts to public access during construction.
- The potential for substantial impairment of the recreational activities at Blake Island State Park through limits to access.
- Mitigation of adverse impacts on historic resources through the Section 106 process and preparation of

a memorandum of agreement for affected historic resources.

What park and recreation land affected by the project is protected by the provisions of Section 4(f)?

Park and recreation sites determined to be protected under the provisions of Section 4(f) and subject to use include only the Washington Street Boat Landing pergola. The pergola would be displaced during construction and relocated after completion of the project to an analogous location at the foot of S. Washington Street. Additional discussion of effects on this site is included below and in the *2006 Supplemental Draft EIS Appendix N, Part A*. Part A evaluates 4(f) properties that would be subjected to use, and details ways in which possible planning to minimize harm would be or has already been incorporated into the design.

What historic resources affected by the project are protected by the provisions of Section 4(f)?

Historic resources determined to be protected under the provisions of Section 4(f) and subject to use by both alternatives include:

- The Alaskan Way Viaduct
- The Alaskan Way Seawall
- The Battery Street Tunnel
- The Bemis Building
- The Washington Street Boat Landing
- The McGraw Kittenger Case (Blu Canary/MGM) Building

These properties have achieved 4(f) status through being listed in the National Register of Historic Places (NRHP), by being determined eligible for inclusion in the National Register, or by being located in a National Register historic district. Authorized under the National Historic Preservation Act of 1966, and administered by the NPS, the National Register is part of a program to coordinate and support public and private efforts to identify, evaluate, and protect historic and archeological resources. To

be eligible for inclusion in the National Register, properties must meet one or more of the following criteria:

Criterion A – the property is associated with events that have made a significant contribution to the broad patterns of our history.

Criterion B – the property is associated with the lives of persons significant in our past.

Criterion C – the property embodies distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

Criterion D – the property has yielded, or may be likely to yield, information important in prehistory or history.

Additionally, there may be archaeological resources within the project boundaries that have not yet been identified or located. Construction of either the Tunnel or Elevated Structure Alternatives could potentially affect these resources through excavation, pile-driving, drilled shaft construction, seawall construction, and soil improvement. Any historically significant discoveries encountered during construction would be subject to Section 4(f) provisions.

Additional discussion of effects on these resources is included below and in the *2006 Supplemental Draft EIS Appendix N, Part A*.

Why is the Alaskan Way Viaduct protected under the provisions of Section 4(f)?

The Alaskan Way Viaduct has been determined eligible for listing in the NRHP under Criterion A for its association with bridge and tunnel building in Washington in the 1950s and under Criterion C for its type, period, materials, and methods of construction. It is the only multi-span concrete double-level bridge in the state. It is also significant for its role in the development of the regional transportation system and of Seattle’s waterfront. (See additional description in the *2006 Supplemental Draft EIS Appendix N, Part A*.)

What use would occur under the Build Alternatives?

Both alternatives would demolish the existing structure.

What avoidance alternatives have been identified?

There are no avoidance or design alternatives that would avoid replacement or reconstruction of the existing viaduct given its inherent structural limitations and high risk of failure during a seismic event.

What planning to minimize harm has been incorporated into the proposal?

Replacement of the existing viaduct is included in both Build Alternatives. Prior to issuance of the Final EIS and Record of Decision, a documentation plan will be required to ensure that fully adequate records are made of the viaduct in accordance with Historic American Engineering Record (HAER) standards.

Why is the Alaskan Way Seawall protected under the provisions of Section 4(f)?

The Alaskan Way Seawall has been determined eligible for listing in the NRHP under Criterion A for its association with development of the central waterfront from the early 1900s to the mid 1930s. It is also significant under Criterion C for the type, period, materials, and methods of construction. It was designed and built by the Seattle Engineering Department using a unique piling and platform design. (See additional description in the *2006 Supplemental Draft EIS Appendix N, Part A.*)

What use would occur under the Build Alternatives?

The Tunnel Alternative would replace the seawall from S. Washington Street up to Broad Street. Between S. Washington Street and Union Street, the existing seawall would be replaced by the outer wall of the tunnel. From Union Street to Broad Street, the seawall would be rebuilt by improving the soils and replacing the existing seawall in most locations.

The Elevated Structure Alternative would replace the seawall in most locations from S. Washington Street up to Broad Street by improving the soils and replacing the existing seawall.

What avoidance alternatives have been identified?

There are no avoidance or design alternatives to replacement or reconstruction of the existing seawall given its inherent structural limitations and high risk of failure during a seismic event.

What planning to minimize harm has been incorporated into the proposal?

Because replacement of the existing seawall is included in both Build Alternatives, prior to issuance of the Final EIS and Record of Decision, a documentation plan will be required to ensure that the structure is documented in accordance with HAER standards.

Why is the Battery Street Tunnel protected under the provisions of Section 4(f)?

The Battery Street Tunnel, along with the Alaskan Way Viaduct, has been determined eligible for listing in the NRHP under Criterion A for its association with tunnel building in Washington in the 1950s and as the first tunnel designed and built by the City of Seattle Engineering Department. It is also significant under Criterion C for the type, period, materials, and methods of construction. It was designed and built to minimize disruption to street traffic and to minimize the risk to adjacent buildings. In addition to its engineering importance, it is significant for its contribution to the development of the local transportation system, connecting SR 99, built in the 1930s, with the Alaskan Way Viaduct, completed in the 1950s. (See additional description in the *2006 Supplemental Draft EIS Appendix N, Part A.*)

What use would occur under the Build Alternatives?

The Battery Street Tunnel would be altered to increase the vertical clearance to approximately 16.5 feet, and to add fire/life safety improvements under both Build Alternatives, including vent structures at the portals. There is also a design choice under the Tunnel Alternative—Lowered Aurora—that would widen the curves at the south and north portals. These changes to the Battery Street Tunnel would substantially change the tunnel portals, which would be likely to affect the Battery Street Tunnel’s historic character.

The SR 99 Under Elliott and Western design choice, which is part of the Preferred Alternative, would have the greatest effect on the existing configuration of the south end of the Battery Street Tunnel because it would require the tunnel floor to be substantially lowered about 450 feet into the tunnel.

What avoidance alternatives have been identified?

The Rebuild Alternative considered in the March 2004 Draft EIS did not include safety-related alterations to the Battery Street Tunnel. The current Elevated Structure Alternative includes the increased vertical clearance and added fire/life safety improvements because retaining the current configuration would not meet minimum safety standards.

What planning to minimize harm has been incorporated into the proposal?

Prior to proceeding with alternatives that include substantial alterations to the Battery Street Tunnel and prior to issuance of the Final EIS and Record of Decision, the project proponents will ensure that the Preferred Alternative includes a specific documentation plan to ensure that fully adequate records are made of the facility in accordance with the HAER standards.

What is the Bemis Building and why is it protected by Section 4(f)?

This building at S. Atlantic Street east of the existing viaduct was the manufacturing plant for Bemis Brothers Bag Company for more than 80 years. It is currently used for artists’ living quarters and studios, requiring truck loading access. It has been determined eligible for listing in the NRHP under Criterion C as an example of an early 20th century industrial building. The main façade is on the north, with a distinctive entry and terra cotta ornament. (See additional description of the Bemis Building in the *2006 Supplemental Draft EIS Appendix N, Part A.*)

What use would occur under the Build Alternatives?

The crossing of S. Atlantic Street over SR 99 could restrict access for the Bemis Building. The elevation of the S. Atlantic Street deck or the location of columns may limit or preclude continued truck access to a single loading dock that fronts S. Atlantic Street. The elevated ramp

in the current conceptual design also may restrict access to the majority of truck loading access to the building, which is from the west from Colorado Avenue S.

The elevated S. Atlantic Street overcrossing over SR 99 would obstruct much of the decorative north façade of the building. This visual obstruction of the façade may permanently affect the building’s historic setting and context.

What avoidance alternatives have been identified?

There is no feasible alternative to the location of a highway facility adjacent to this building due to the location of SR 99. The relocation of the north-south roadway is not feasible because of the lack of alternative alignments. Alternatives to the ramp are discussed below.

What planning to minimize harm has been incorporated into the proposal?

A design with no elevated structures through use of an at-grade full-movement intersection for the SR 99/SR 519 connection was explored for early phases of development of the Surface Alternative described in the Draft EIS. With this alternative, traffic was found to operate at unacceptable levels of service and create substantial delays. Such an at-grade intersection was found to be infeasible for either of the alternatives discussed in the Supplemental Draft EIS because the delays would substantially degrade the performance of either alternative.

Providing no ramps for access to S. Atlantic Street would avoid obstructing the north façade of the building. Additional design choices are being evaluated that may result in a different configuration for S. Atlantic Street such that the north façade of the building would not be obstructed.

The enhanced access from Colorado Avenue S. to S. Atlantic Street incorporated into the current design choices may be further analyzed with respect to effects on the loading docks on the west side of the building. It may be feasible to maintain access to the loading docks through traffic control on Colorado Avenue S. Other roadway design choices providing the enhanced arterial access to the south through routes other than Colorado Avenue S. may result in fewer impacts on the loading docks. An additional non-roadway alternative may involve reorienting the loading docks away from Colorado

Avenue S. with enough maneuvering area to avoid disrupting traffic flow on Colorado Avenue S.

For the alternatives under consideration, prior to designation of the Preferred Alternative and issuance of the Final EIS and Record of Decision, further design choices will be explored to document whether there are avoidance alternatives to the elevated ramps north of the building. As project planning continues, additional options may be developed. This also includes all possible planning of design alternatives for the roadway or the building to ensure that truck access to the building is maintained from the existing loading docks on Colorado Avenue S. or that adequate alternative facilities are provided.

What is the Washington Street Boat Landing and why is it protected by Section 4(f)?

The Washington Street Boat Landing is both a park property and a historic resource. It has been determined eligible for listing in the NRHP under Criterion C, for its design characteristics. It is on City of Seattle right-of-way at the end of S. Washington Street. The pergola is listed in the NRHP. The park facility consists of the pergola and an additional feature, the dock, which includes a float and ramp to connect with the pergola. This facility has been operated by the City of Seattle Parks Department for public open space and includes benches as well as being operated as temporary moorage. The floats typically were removed in winter to avoid possible storm damage. The floats were not replaced in the summer of 2001, after the Nisqually earthquake, due to the need for replacement of pilings and because the investment was deemed unwise due to uncertainty about future plans for the viaduct and seawall. The floats are not a 4(f) issue because they have already been removed by the City. (See additional description in the *2006 Supplemental Draft EIS Appendix N, Part A.*)

What use would occur under the Build Alternatives?

The Washington Street Boat Landing pergola would be removed during construction under either alternative. For the Tunnel Alternative construction, the pergola would be relocated farther to the west from the existing seawall, but would remain within the S. Washington Street right-of-way. It would be 42 feet farther west under the stacked

tunnel or 53 feet farther west under the side-by-side tunnel. The Tunnel Alternative provides considerable opportunities for additional open space amenities within the Alaskan Way right-of-way, such that the surrounding uses likely would provide enhanced use of the pergola.

Under the Elevated Structure Alternative, the new elevated highway structure would be closer, dominate views to a greater extent, and result in noise and other proximity impacts. With the Elevated Structure Alternative, the pergola would overhang the water at the edge of the new seawall by its width (about 26 feet), as it does today.

What avoidance alternatives have been identified?

No specific alternatives have been identified that would avoid the temporary relocation of the pergola.

What planning to minimize harm has been incorporated into the proposal?

Planning to minimize harm includes relocation of the pergola and will provide the same facility farther to the west after completion of construction.

What is the McGraw Kittenger Case (Blu Canary/MGM) Building and why is it protected by Section 4(f)?

This structure at the southwest corner of Battery Street and Second Avenue is the most architecturally interesting and most intact of the local film distribution buildings. This small art deco building was constructed in the 1930s for the Alexander Myers Company. From 1936 until the 1950s, it was the regional film distribution center for Metro-Goldwyn-Mayer. It is now a card shop and small restaurant. The reinforced concrete building was designed by a San Francisco architect, Edmund W. Denle. Interior alterations have been made; however, the art deco exterior remains highly intact, with buff-colored brick cladding and extensive black terra cotta ornament with an arrow motif, including pilasters, window trim, and medallions along the parapet. The building has been determined eligible for listing in the NRHP under Criterion A for its association with the film distribution industry, and Criterion C for its architectural design. (See additional description in the *2006 Supplemental Draft EIS Appendix N, Part A.*)

What use would occur under the Build Alternatives?

The Tunnel Alternative could be paired with either the Lowered Aurora or the Partially Lowered design choices. Lowered Aurora would include widening the Battery Street Tunnel portals, which would have the greater impact on this property. The Lowered Aurora design choice would require the tunnel to pass under a portion of the northwest corner of the building. With this design choice, the corner of the building foundation would need to be supported temporarily while the soil below is excavated and the tunnel is constructed. The Tunnel Alternative in the absence of widened curves at the Battery Street Tunnel portals would not require the same support methods but may require soil stabilization during tunnel construction to prevent the cracking or settlement of the building.

What avoidance alternatives have been identified?

The design choice not to widen the Battery Street Tunnel curves would avoid effects to this resource.

With the Lowered Aurora design choice, refinements for widening the Battery Street Tunnel curves, or particular construction methods, may allow construction to take place under the building. At this time, design has not proceeded in sufficient detail, but efforts to avoid construction effects that may affect the historic integrity of the structure will be incorporated into the design process. Prior to issuance of the Final EIS and Record of Decision, the Preferred Alternative will include specific plans to protect the building while the tunnel is constructed beneath, so that its associations with the film distribution center can be retained.

What planning to minimize harm has been incorporated into the proposal?

Prior to issuance of the Final EIS, the Preferred Alternative will include specific plans to protect the building from construction effects such as cracking or settlement while the modifications to the Battery Street Tunnel are constructed beneath.

What park, recreation, and historic resources are not discussed in this evaluation?

Park, recreation, and historic resources not discussed in this section are either:

- (1) Not protected by Section 4(f), or
- (2) Are subject to effects that would not substantially impair the activities, features, or attributes that qualified the resource for protection under Section 4(f).

The *2006 Supplemental Draft EIS Appendix N, Part B* addresses in detail the resources that were evaluated but were not subject to use or substantial impairment. The *2006 Supplemental Draft EIS Appendix N, Part C* includes historic inventory forms for buildings evaluated as part of the project. The *2006 Supplemental Draft EIS Appendix N, Part D* is a list of Section 6(f) facilities that have received funding from the federal Land and Water Conservation Fund. There is no use of these specified facilities.

In many cases, although these resources are adjacent to the construction site, such as the Waterfront Park between Piers 57 and 59, the construction of the seawall under the Tunnel or Elevated Structure Alternative would maintain access to the facility and would not result in noise or other effects that would substantially impair the public's ability to access and enjoy the resource.

PURPOSE AND NEED

Annotated to summarize changes from 2003 Purpose and Need

Introduction: Function and Role of the Alaskan Way Viaduct Corridor and Alaskan Way Seawall

Identified function of the seawall.

The Federal Highway Administration (FHWA), the Washington State Department of Transportation (WSDOT), and the City of Seattle (City) are proposing major improvements to the Alaskan Way Viaduct Corridor and to the Alaskan Way Seawall. Both the Alaskan Way Viaduct Corridor and the Alaskan Way Seawall are located in downtown Seattle, King County, Washington. As defined for this project, the Alaskan Way Viaduct Corridor extends north from approximately South Spokane Street to Roy Street. The Alaskan Way Seawall extends from South Washington Street to Bay Street along Elliott Bay on Puget Sound. From South Washington Street to approximately Pike Street the seawall supports the viaduct. The entire length of the seawall supports surface streets, and utilities.

The Alaskan Way Viaduct Corridor (part of SR 99) and Interstate 5 (I-5) are the two primary north-south routes to and through downtown Seattle. The Alaskan Way Viaduct Corridor currently carries about 110,000 vehicles a day and serves both through trips and trips accessing the downtown business district and nearby neighborhoods. The Alaskan Way Viaduct Corridor provides the quickest and most convenient route to and through downtown Seattle for communities located to the northwest and southwest of downtown. The Corridor plays a vital role in freight mobility, providing a major truck route through downtown, and providing access to the Ballard-Interbay and greater Duwamish manufacturing and industrial centers. The Corridor also serves as a transit route for local and express bus service.

Simplified description of existing corridor access.

Access to SR 99 along the southern and central parts of the corridor is via ramps at selected locations. North of the Battery Street Tunnel access is via right turns from intersecting city streets. North and southbound traffic is

physically separated to increase traffic flow and to minimize conflicting left-turning traffic movements. Congestion that currently develops is typically the result of incidents or back-ups at access ramps.

WSDOT studies in 1995 and 1996 concluded that the soils on which the Alaskan Way Viaduct is constructed are vulnerable to soil liquefaction and may lose their ability to support the structure. Studies concluded that if an earthquake of magnitude 7.5 or higher occurred close to Seattle, the Alaskan Way Viaduct could be rendered unusable or even collapse.

Condensed description of seismic vulnerability.

The February 28, 2001 Nisqually earthquake (magnitude 6.8, located 35 miles from Seattle and deep below the surface) caused moderate damage to the Alaskan Way Viaduct. The structure was closed for inspection and repairs intermittently for several days over a period of several months. The extent of damage and loss of the heavily traveled corridor heightened awareness of the need for immediate improvements to the corridor. A Structural Sufficiency Report was prepared after the earthquake and it concluded that continued reliance on the existing viaduct is not prudent.

The Seawall supports Alaskan Way (the surface street) and a variety of utilities. The fills retained by the wall provide lateral support for some of the foundations of the Alaskan Way Viaduct. Alaskan Way includes King County Metro’s Waterfront Streetcar, which provides trolley access to various waterfront locations. Alaskan Way also provides access to Colman Dock, which supports vehicle and passenger ferry.

Following the Nisqually earthquake, field investigations and liquefaction analyses were performed for a portion of Alaskan Way (the surface street) where settlements of the roadway had occurred. These investigations concluded that a portion of the loose fills below the relieving platform liquefied and settled in areas where the Seawall structure has been heavily damaged by marine borer activity.

Purpose of the Proposed Action

Added improved access to and from SR 99 north of Battery Street Tunnel to project purpose.

The main purpose of the proposed action is to provide a transportation facility and seawall with improved earthquake resistance. The project will maintain or improve mobility, accessibility, and traffic safety for people and goods along the existing Alaskan Way Viaduct Corridor as well as improve access to and from SR 99 from the Battery Street Tunnel north to Roy Street.

Need for the Proposed Action

Added improved access to and from SR 99 north of Battery Street Tunnel to project needs.

The Alaskan Way Viaduct and Alaskan Way Seawall are both at the end of their useful life. Improvements to both are required to protect public safety and maintain the transportation corridor. Because these facilities are at risk of sudden and catastrophic failure in an earthquake, FHWA, WSDOT and the City of Seattle seek to implement these improvements as quickly as possible. Improvements between the Battery Street Tunnel and Roy Street will be needed to improve access to and from SR 99 and to improve local street connections once the viaduct is replaced. FHWA, WSDOT and the City of Seattle have identified the following underlying needs the project should address:

Seismic Vulnerability

The ability of the Alaskan Way Viaduct and Alaskan Way Seawall to withstand earthquakes needs to be improved. The Alaskan Way Viaduct is vulnerable to earthquakes because of its age, design and location. Built in the 1950s, the Alaskan Way Viaduct is past the halfway point in its 75-year design life and does not meet today’s seismic design standards. Additionally, the soils around the foundations of the Alaskan Way Viaduct consist of former tidal flats covered with wet, loose fill material. The Alaskan Way Seawall holds these soils in place along the majority of the Alaskan Way Viaduct corridor, which is also vulnerable to earthquakes.

Traffic Safety

Condensed description of traffic safety problems.

Traffic safety along the Alaskan Way Viaduct Corridor needs to be improved. Traffic incident data for the years 1998 through 2000 indicate that high levels of traffic crashes occur in some portions of the Alaskan Way Viaduct Corridor. Many locations on the Alaskan Way Corridor meet WSDOT criteria for a notably high level of vehicle crashes.

Roadway Design Deficiencies

The Alaskan Way Viaduct Corridor does not meet current roadway design standards and has several types of deficiencies, which need to be improved.

Condensed description of roadway design deficiencies.

The lane width provided on the Viaduct does not meet current design requirements. Narrow lane width affects roadway capacity and operating speeds as well as safety. In addition, substantial sections of the Viaduct have minimal or no shoulders. Lack of shoulders or narrow shoulder width can adversely affect roadway operations, safety, and capacity.

The on- and off-ramps of the Viaduct and at the south end of the Battery Street Tunnel also do not meet current WSDOT roadway design standards. Short acceleration and deceleration lane lengths may affect the ability of drivers to safely enter and exit the freeway system. Non-standard ramp tapers may not provide drivers with adequate length to exit or enter into through traffic.

Added description of design issues in and north of Battery Street Tunnel.

The lane widths within the Battery Street Tunnel do not meet current WSDOT design standards. Limited sight distance may contribute to rear-end collisions. North of the Battery Street Tunnel, several local streets connect directly to the corridor. Drivers entering and exiting SR 99 may not have room to accelerate or decelerate without adversely affecting traffic flow or safety.

Bicycle and Pedestrian Safety and Accessibility

Added description of pedestrian safety issues north of Battery Street Tunnel.

Bicycle and pedestrian safety, mobility, and accessibility need to be maintained or improved as part of the surface improve-ments to Alaskan Way. The Seattle waterfront is the center for Seattle’s well-developed comprehensive Urban Trails System. Regional trails from the north, east and west converge on Alaskan Way. Every day, thousands of tourists, recreational walkers and joggers, shoppers, bicyclists, ferry users and office workers utilize Alaskan Way. In addition, the project corridor north of Battery Street Tunnel has only one pedestrian crossing. This part of the project corridor is identified as a high pedestrian accident location. Pedestrian and bicycle facilities across SR 99 will be accommodated with the proposed surface street connections between the Battery Street Tunnel and Roy Street to provide safe passage.

GOALS AND OBJECTIVES

In addition to the project purpose and need, the follow-ing goals and objectives will guide project development.

System Linkage

Moved description of system linkage from project needs to goals and objectives.

An objective of the project is support of an integrated re-gional transportation system. The WSDOT is currently planning to extend SR 509 south from its current termi-nus near South 188TH Street to connect with I-5 and im-prove access to and from communities south of Seattle-Tacoma International Airport. SR 509 connects to SR 99 at the First Avenue S. Bridge, and serves as a major route from the south to downtown Seattle and nearby port facil-ities and industrial areas.

Changes proposed as part of the SR 519 Intermodal Ac-cess Project in the vicinity of Safeco Field would improve east-west connections between the waterfront and I-5 and I-90, both of which are principal corridors in the regional transportation system. A portion of the SR 519 Inter-modal Access Project has been completed.

Washington State Ferries are a division of the State Department of Transportation, and the ferry system is part of the state highway system. The Colman Ferry Dock connects downtown Seattle with ferry service to Bremer-ton, Bainbridge Island, and passenger ferry service to Vashon Island. Over 10 million passengers and 3 million vehicles currently use these ferries annually. Service ex-pansion is included in the State's long-range plans for the ferry system.

Added need for improved connections to and from SR 99 north of Battery Street Tunnel.

As part of implementing the South Lake Union neighbor-hood plan, the City is currently exploring options for im-proving mobility in the area, including east-west mobility between SR 99 and I-5. Improved connections are needed to provide access to and from SR 99 and the local arterial network. The City is also planning to widen the Spokane Street Viaduct. The Spokane Street Viaduct provides the major link between I-5 and West Seattle (via the West Seattle Bridge). The major transit route from West Seattle

to downtown Seattle is by way of the West Seattle Bridge and the Alaskan Way Viaduct.

Seattle’s Plans for the Downtown Waterfront

Simplified description of Seattle’s waterfront plans.

Improvements to the Alaskan Way Viaduct and Alaskan Way Seawall need to be integrated with and supportive of existing activities and land use plans for the Seattle water-front. The Seattle downtown waterfront has been trans-formed from its origins as a working waterfront, charac-terized by shipping, warehouse and industrial uses, to an important area for tourism and recreation. The central waterfront now has a vibrant mix of uses which include office, retail, hotel, residential, conference center, aquari-um, museum, parks, cruise ship terminal, ferry terminal, and various types of commercial and recreational moor-age. Land use plans and policies for downtown Seattle and the water-front will help guide improvements in the Corridor to provide opportunities for access to and along the waterfront for freight, pedestrians and bicyclists, and an improved surface street.

Plans for Habitat Improvement

Clarified that project will consider habitat enhancement.

The existing Alaskan Way Seawall provides poor habitat for chinook salmon (listed as threatened under the Endangered Species Act) and other marine species. Reconstruction of the Alaskan Way Seawall offers an opportunity to improve habitat where practicable and fea-sible. Elliott Bay is an important link for juvenile salmon migrating from the Duwamish River toward the Pacific Ocean. The vertical bulkheads of the Alaskan Way Sea-wall and other features of the waterfront provide minimal habitat for the numerous young chinook and chum salmon that migrate across the Seattle waterfront to the north shore of Elliott Bay during their critical rearing period. This project will consider measures to enhance habitat.

LIST OF APPENDICES

Supporting Documentation (All in separate volumes)

- A. Agency and Public Coordination
- B. Alternatives Description and Construction Methods Technical Memorandum
- C. Transportation Discipline Report
- D. Visual Quality Technical Memorandum
- E. Visual Simulations
- F. Noise and Vibration Discipline Report
- G. Land Use and Shorelines Technical Memorandum
- H. Parks and Recreation Technical Memorandum
- I. Social Resources Technical Memorandum
- J. Environmental Justice Technical Memorandum
- K. Relocations Technical Memorandum
- L. Historic Resources Technical Memorandum
- M. Archaeological Resources and Traditional Cultural Places Technical Memorandum
- N. Section 4(f) Evaluation Parts A, B, C, and D
- O. Public Services and Utilities Technical Memorandum
- P. Economic Technical Memorandum
- Q. Air Quality Discipline Report
- R. Fisheries, Wildlife, and Habitat Discipline Report
- S. Water Resources Discipline Report
- T. Geology and Soils Technical Memorandum
- U. Hazardous Materials Discipline Report
- V. Energy Technical Memorandum
- W. Alternatives and Options Drawings
- Y Supplemental Draft EIS Annotated Outline

ACRONYMS

A	
AWV Project	Alaskan Way Viaduct and Seawall Replacement Project
B	
BMPs	Best Management Practices
BNSF	Burlington Northern Santa Fe Railway
C	
CEVP®	Cost Estimate Validation Process
City	City of Seattle
CO	Carbon monoxide
Corps	United States Army Corps of Engineers
CZMA	Coastal Zone Management Act
D	
dBA	A-weighted decibels
E	
EIS	Environmental Impact Statement
EMFs	electric and magnetic fields
EPA	Environmental Protection Agency
ESA	Endangered Species Act
F	
FHWA	Federal Highway Administration
H	
HOV	high-occupancy vehicle
HPA	Hydraulic Project Approval
I	
I-5	Interstate 5
N	
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NPDES	National Pollutant Dishcharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places

P	
PAHs	polynuclear aromatic hydrocarbons
ppm	parts per million
PSRC	Puget Sound Regional Council
R	
RALF	Resource Agency Leadership Forum
S	
SEPA	State Environmental Policy Act
SHPO	State Historic Preservation Officer
SIG	Seattle International Gateway
SODO	South of Downtown
SOVs	single occupant vehicles
SR	State Route
T	
TMC	Traffic Management Center
W	
WOSCA	Washington-Oregon Shippers Cooperative Association
WSDOT	Washington State Department of Transportation
WSF	Washington State Ferries

DISTRIBUTION LIST

Leadership Group

- Bruce Agnew, Cascadia Discovery Institute
- Michael Anderson, Washington State Ferries
- LCDR Pete Carroll, U.S. Coast Guard
- Frank Chopp, WA State House of Representatives
- John Coney, Queen Anne Neighborhood
- Lee Copeland, Mithun
- Mary Lou Dickerson, WA State House of Representatives
- Jan Drago, Seattle City Council
- Bob Drewel, Puget Sound Regional Council
- Joni Earl, Sound Transit
- Chris Elwell, Seattle/King County Building and Construction Trades Council
- Steve Erickson, Magnolia Neighborhood
- Dan Evans, Daniel J. Evans and Associates
- David Freiboth, King County Labor Council
- Stan Gent, Seattle Steam Company
- Dave Gering, Manufacturing and Industrial Council
- David Goodyear, TY Lin International
- Tom Graff, Downtown District Council
- Jerry Grinstein, Madrona Venture Group
- Fred Jarrett, WA State House of Representative
- Steve Leahy, Greater Seattle Chamber of Commerce
- Nick Licata, Seattle City Council
- Stephen Lundgren, Ballard Neighborhood
- Dan MacDonald, Burlington Northern Santa Fe Railway
- Doug MacDonald, WA State Secretary of Transportation
- Dan Mathis, Federal Highway Administration
- Craig Montgomery, Pioneer Square Community Association
- Ed Murray, WA State House of Representatives
- John Musgrave, West Seattle Neighborhood
- Greg Nickels, City of Seattle Mayor
- Jane Nishita, Qwest
- John Okamoto, Port of Seattle
- Dan O’Neal, Washington State Transportation Commissioner
- Ralph Pease, Argosy Cruises
- Neil Peterson, FlexCar
- Erik Poulsen, WA State Senate
- Margarita Prentice, WA State Senate
- Charles Roeder, University of Washington

- Judy Runstad, Foster Pepper PLLC
- Jessyn Schorr, Transportation Choices Coalition
- Greg Smith, Urban Visions
- David Spiker, Seattle Design Commission
- Peter Steinbrueck, Seattle City Council
- Harold Taniguchi, King County Department of Transportation
- Harold Ugles, International Longshoreman and Warehouseman Union Local 19
- Barbara Wilson, Seattle Planning Commission
- Nick Wofford, Bremerton City Council
- David Yeaworth, Allied Arts of Seattle

Business/Trade/Other Organizations

- Belltown Business Association
- Downtown Seattle Association
- Graham & Dunn
- King County Metro
- Pike Place Market PDA
- Pioneer Square Historic Preservation Board
- Seattle Aquarium
- Seattle Parks Board
- Washington State Public Stadium Authority

Libraries

- Ballard Branch, City of Seattle Library
- Capitol Hill Branch, City of Seattle Library
- Central Library, City of Seattle Library
- Delridge Branch, City of Seattle Library
- King County Library System
- North East Branch, City of Seattle Library
- Seattle Central Community College Library
- Sound Transit Information Center
- University of Washington – Engineering Library
- University of Washington – Architecture and Urban Planning Library
- Washington State Library
- Washington State Department of Transportation Library

Neighborhood Service Centers

- Ballard Neighborhood Service Cednter
- Capitol Hill Neighborhood Service Center
- Central Neighborhood Service Center
- Delridge Neighborhood Service Center
- Downtown Neighborhood Service Center
- Greater Duwamish Neighborhood Service Center
- Greenwood Neighborhood Service Center
- Lake City Neighborhood Service Center
- Lake Union/Fremont Neighborhood Service Center
- Southeast Neighborhood Service Center
- University District Neighborhood Service Center
- Queen Anne/Magnolia Neighborhood Service Center
- West Seattle Neighborhood Service Center

Elected Officials

- FEDERAL
- U.S. Senator Patty Murray
- U.S. Senator Maria Cantwell
- U.S. Representative Brian Baird
- U.S. Representative Norm Dicks
- U.S. Representative Doc Hastings
- U.S. Representative Jay Inslee
- U.S. Representative Rick Larson
- U.S. Representative Jim McDermott
- U.S. Representative Cathy McMorris
- U.S. Representative Dave Reichert
- U.S. Representative Jim Adam Smith

- STATE OF WASHINGTON
- Governor Christine Gregoire
- Lt. Governor Brad Owen
- Attorney General Rob McKenna
- Representative Zack Hudgins – 11th Legislative District
- Representative Bob Hasegawa – 11th Legislative District
- Representative Eileen Cody – 34th Legislative District
- Representative Joe McDermott – 34th Legislative District
- Representative Helen Sommers – 36th Legislative District
- Representative Sharon Tomiko Santos – 37th Legislative District
- Representative Eric Pettigrew – 37th Legislative District
- Senator Mary Margaret Haugen – 10th Legislative District
- Senator Adam Kline – 37th Legislative District

- Senator Jeanne Kohl-Welles – 36th Legislative District
- Senator Pat Thibaudeau – 43rd Legislative District
- WASHINGTON STATE TRANSPORTATION COMMISSION
- Richard Ford
- Edward Barnes
- Bob Distler
- Elmira Forner
- Dale Stedman
- Carol Moser

- CITY OF SEATTLE
- Deputy Mayor Tim Ceis
- Councilmember Sally Clark
- Councilmember Richard Conlin
- Councilmember David Della
- Councilmember Jean Godden
- Councilmember Richard McIver
- Councilmember Tom Rasmussen
- Mic Disnsmore – Port of Seattle Chief Executive Officer
- John Creighton – Port of Seattle Commissioner
- Patricia Davis – Port of Seattle Commissioner
- Bob Edwards – Port of Seattle Commissioner
- Alec Fiskén – Port of Seattle Commissioner
- Lloyd Hara – Port of Seattle Commissioner

- KING COUNTY
- Executive Ron Sims
- Councilmember Bob Ferguson – District 1
- Councilmember Larry Gossett – District 2
- Councilmember Kathy Lambert – District 3
- Councilmember Larry Phillips – District 4 – *Chair*
- Councilmember Julia Patterson – District 5
- Councilmember Jane Hague – District 6
- Councilmember Pete von Reichbauer – District 7
- Councilmember Dow Constantine – District 8
- Councilmember Reagan Dunn – District 9

Media

- Asian Weekly/Seattle Chinese Post
- Daily Journal of Commerce
- Filipino American Herald
- International Examiner
- NW Vietnamese Weekly
- Puget Sound Business Journal
- Seattle Post-Intelligencer
- Seattle Scanner
- Seattle Times
- Seattle Weekly
- The Hispanic News
- The Medium
- The Stranger
- Real Change

Tribes

- Duwamish
- Muckleshoot
- Snoqualmie
- Suquamish
- Tulalip
- Yakama Nation

Resource Agency Leadership Forum

- City of Seattle
- Environmental Protection Agency – Region 10
- Federal Highway Administration
- Federal Transit Administration
- King County
- National Marine Fisheries Service
- Puget Sound Clean Air Agency
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- Washington State Department of Ecology
- Washington State Department of Fish and Wildlife
- Washington State Department of Natural Resources
- Washington State Department of Transportation

Other Federal/State Agencies

- Department of the Interior
- Washington State Department of Transportation – Environmental Services Office
- Washinton State Department of Archaeology and Historic Preservation

REFERENCES

ASCE Expert Team. 2002. *Alaskan Way Viaduct, Phase 1 - Retrofit Option*. April 24, 2002.

Berger/Abam Engineers. 2005. *Draft Alaskan Way Seawall Ekki Wood Replacement*. April 2005.

King County 2006.
http://transit.metrokc.gov/tops/bus/waterfront_street-car.html. Accessed April 6, 2006

Larson, Rick. May 11, 2005 *Letter to the House Transportation committee members Young, Petri, Oberstar, and DeFazio*. May 2005

Parametrix. 2003. *Final Revised Screening of Design Concepts*. June 2003.

Parametrix. 2006a. *Battery Strret Tunnel Alternatives Screening Memorandum*. March 2006.

Parametrix. 2006b. *2006 Alternatives Screening North of the Battery Street Tunnel*. March 2006.

Parsons Brinckerhoff. 2002. *Rebuild/Retrofit Alternative Report*. August 2002.

Parsons Brinckerhoff. 2003. *Rebuild/Retrofit 500, 500-Year Design Earthquake*. April 2003.

Puget Sound Regional Council. December 2004. *Parking Inventory Data for the Central Puget Sound Region, 2004*.

Seattle, City of. 2005a. City Countil Resolution 30726. January 10, 2005.

Seattle, City of. 2005b. *City of Seattle Comprehensive Plan, Towards Sustainable Seattle*. Department of Planning and Development. January 2005. Amended October 2005.

Seattle City Light. 2005. Personal communication with Chuck Kirchner, Environmental Review consultant to the City of Seattle, Seattle Department of Transportation, and Seattle City Light staff through email correspondence dated September 30, 2005.

Seattle Department of Transportation and Washington State Department of Transportation. Preferred Alternative Agreement. December 6, 2004.

Shannon and Wilson. 2005a. *SR 99: Alaskan Way Viaduct and Seawall Replacement Project Geotechnical and Environmental Data Report*. 2005

Shannon and Wilson. 2005b. *SR 99: Alaskan Way Viaduct and Seawall Replacement Project Geotechnical and Environmental Data Report – North of the Battery Street Tunnel*. 2005.

TY Lin International, 2005. *Alaskan Way Viaduct Summary – Safety and Service Limitations of the Alaskan Way Viaduct*. November 22, 2005.

Washington State Department of Transportation. 2003. *Centennial Accord Plan*.
http://www.wsdot.wa.gov/tribal/centenniuual_accord.htm
Accessed April 6, 2006.

Washington State Department of Transportation. 2004. *AWV No Replacement Concept, Summary Findings*. September 17, 2004.

Washington State Department of Transportation. 2006a. *Traffic noise analysis and abatement policy and procedures*. March 17, 2006.

Washington State Department of Transportation 2006.
www.wsdot.wa.gov/projects/I405.
Accessed February 2006.

Washington State Legislature 2006. Engrossed Substiture House Bill 2871, Chapter 311 Laws of, 2006, Sections 27, 28, and 29. March 29, 2006

LIST OF PREPARERS

Name AFFILIATION	Contribution	Education Certifications/Licenses Professional Organizations	Years Experience
Mark Anderson PE WSDOT	<i>Assistant Project Engineer</i> <i>Utilities Lead</i> <i>South Section Lead</i>	MBA BS Environmental (Civil) Engineering BS Atmospheric Science Professional Engineer (Washington, Oregon)	30
Brent Baker PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Reviewer</i>	MA Economics BA Economics NABE Seattle (Member) Economists Club (Member)	18
Stephen Boch PE FHWA	<i>Major Project Oversight Manager</i>	BS Civil Engineering Professional Engineer (Virginia)	30
Jeff Buckland PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Land Use and Shoreline Relocation</i>	MRP Regional Planning BA Geography APA, AICP	18
James F. Burton PARAMETRIX	<i>Lead Graphic Designer</i> <i>Technical Appendices</i>	Certificate of Graduation Advertising Art	23
Bob Chandler SEATTLE DEPARTMENT OF TRANSPORTATION	<i>Management Oversight</i> <i>Editorial & Technical Review</i>		37
John Chirco PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Chief Civil Engineer</i>	MS Transportation Engineering BS Civil Engineering	18
Gordon T. Clark PE PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Alternative Development</i> <i>Facilities Design</i> <i>Underground Structures</i>	MS Engineering BS Civil Engineering Professional Engineer (Washington, New York, Texas)	24
Jill Czarnecki PARAMETRIX	<i>EIS Author and Technical Team</i>	BS Geology Certificate Technical Writing and Editing	8
Carter Danne PE PARAMETRIX	<i>Transportation</i>	BS Civil Engineering	7
R. Travis Deane PE SHANNON & WILSON	<i>Geology and Sols</i>	MS Geotechnical Engineering Professional Engineer (Washington and California)	13
Youssef Dehghani PhD PE PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Transportation Modeling</i>	PhD Civil Engineering MS Civil Engineering BS Civil Engineering Professional Engineer (Washington, Florida) ITE TRB Committee on Travel Demand Modeling/Forecasting International Association of Travel Behavior Reserch	32
Lorena Dinger PARAMETRIX	<i>Editor</i>	Certificate Technical Editing	7

LIST OF PREPARERS

Name AFFILIATION	Contribution	Education Certifications/Licenses Professional Organizations	Years Experience
Boris Dramov ROMA DESIGN GROUP	<i>Urban Design Concepts</i>	Advanced Environmental Studies MS Urban Design BA of Architecture Registered Architect (California, Florida, Texas, Oregon and Washington DC) National Council of Architecural Registration Board (Member) AIA (Fellow), AICP (Fellow)	32
Kimberly Farley WSDOT	<i>Mangement Oversight & Editorial Review</i>	JD BS Applied Engineering Geology	14
Paul Fendt PARAMETRIX	<i>Water Resources</i>	BS Civil Engineering	23
Debbie Fetherston PARAMETRIX	<i>EIS Team Document Production</i>		12
Emily Fishkin ENVIROISSUES	<i>Technical Lead Public Involvement</i>	BA Public Policy Studies	3
Leonard A. Forsman LARSON ANTHROPOLOGICAL SERVICES LIMITED	<i>Historic Archaeological Resources Traditional Cultural Places</i>	BA Anthropology Society for American Archaeology	22
Jena Friebel PARAMETRIX	<i>Lead Author Water Resources</i>	MS Environmental Engineering BS Biology	7
Scott Gaulke PE SHANNON & WILSON	<i>Hazardous Materials</i>	MS Engineering Science BS Geology Professional Engineer (Washington) Licenceded Hydrogeologist	22
Peter M. Geiger PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Technical Lead Economics</i>	MS Physics BS Physics	17
Helen Ginzberg PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Tunnel Air Quality Modeling</i>	MS Meteorology and Mathematical Modeling	26
Ralph Graves PhD PE PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Reviewer</i>	PhD Civil Engineering MCE Civil Engineering BS Civil Engineering	32
Ron Grina HDR	<i>Technical Lead Publice Services and Utilities</i>	BS Environmental Policy/Assessment APA, AICP	11
Mark Hafs PARAMETRIX	<i>EIS Author</i>	MLA Landscape Architecture BLA Landscape Architecture American Society of Landscape Architects	17
Erika Harris PARAMETRIX	<i>Technical Lead Environmental Justice</i>	BA Economics AICP	8

Name AFFILIATION	Contribution	Education Certifications/Licenses Professional Organizations	Years Experience
Todd Hudak	<i>Real Estate and Right of Way</i>	JD BA Political Science Real Estate Salesperson (Washington) Washington State Bar Association (Member) International Right of Way Association (Member)	8
Kevin Keller PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Vibration Analysis</i>	BS Geography AICP	14
Margaret Kucharski WSDOT	<i>Environmental Specialist</i>	MPP Environmental Policy BA Polital Science	1
Ginette Lalonde PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Air Quality and Noise Analysis</i>	BS Civil Engineering	7
Lynn L. Larson LARSON ANTHROPOLOGICAL SERVICES LIMITED	<i>Archaeological Resoures Traditional Cultural Places</i>	MA Curriculum and Education BA Anthropology Broard of Directors American Cultural Resources Association Society for American Archaeology	32
Dennis E. Lewarch LARSON ANTHROPOLOGICAL SERVICES LIMITED	<i>Archaeological Resources</i>	PhC Advanced to Doctoral Candidacy PhD Program Anthropology MA Anthropology BA Anthropology Society for American Archaeology	35
Tony Lo PE PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Transportation</i>	MS Transportation Engineering BS Civil Engineering Professional Engineer (Washington)	10
Nicola Longo PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Transprotation</i>	MS Civil Engineering Master of Urban Design & Planning <i>Laurea</i> (Bachelor Plus Granduate Coursework) in Civil Engineering ITE	8
Douglas B. MacDonald WSDOT	<i>Management Oversight and Editorial Review</i>	JD BA History	32
David S. Mattern PARAMETRIX	<i>Environmental Team Manager EIS Author</i>	MA Geography BA Geography American Planning Association National Association of Environmental Professionals AICP	22
Stephanie Miller PARAMETRIX	<i>EIS Lead Author</i>	BA Biology	11

LIST OF PREPARERS

Name AFFILIATION	Contribution	Education Certifications/Licenses Professional Organizations	Years Experience
Betsy J. Minden PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Author Social Resources</i>	MUP Urban Planning BA Biology American Planning Association AICP	26
Erin Nelson PARAMETRIX	<i>Water Resources</i>	MS Environmental Engineering BS Geological Engineering	14
Monique A. Nykamp <i>PE</i> SHANNON & WILSON	<i>Geology and Soils</i>	MS Geotechnical Engineering Professional Engineer (Washington)	15
Carrie Oshiro PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Transportation</i>	BA Geography and Economics Certificate Global Trade and Transportation Logistics Certificate International Economics	8
William P. Ott CONSTRUCTION CONSULTANT	<i>Constructability and Scheduling</i>	BS Civil Engineering BS Mechanical Technology	35
Mike Rigsby <i>PE</i> PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Deputy Project Director</i>	MS Operations Research BS Professional Engineer (Virginia and Washington)	31
Nicholas Roach PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Transportation</i>	MPA Urban Planning BA Political Science Certificate Project Management ITE, APA, PMI, AICP	21
Stephen S. Rolle <i>PE</i> PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Technical Lead Transportation</i>	MS Civil Engineering BS Civil Engineering Professional Engineer (Washington) TE, APA	13
Patrick Romero PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Noise Analyst</i>	MS Enviromental Science FHWA Traffic Noise Modeling Program	9
Bob Rosain PARAMETRIX	<i>Water Resources</i>	MS Chemical Engineering	32
Andrea Rose PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Editor</i>	BA Romance Linguistics	16
Kathleen Rossi PARAMETRIX	<i>Lead Author Alternatives Description and Construction Methods</i>	MUP Urban Planning BS Environmental Studies	20
Madhavi Sanakkayala PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Transportation Technical Staff</i>	MS Civil Engineering BE Civil Engineering Engineer in Training (Washington) ITE, Women's Transportation Seminar	5

Name AFFILIATION	Contribution	Education Certifications/Licenses Professional Organizations	Years Experience
Jim Schettler <i>PE SE</i> JACOBS CIVIL INC	<i>Engineering</i>	BS Civil Eengeering Professional Engineer (Washington, Alaska) Structural Engineer (Washington) FEMA/ATC Post Earthquake Inspection Confined Space Certification Supervisor/Entrant/Attendant Certification	26
Jean M. Schwinberg PARAMETRIX	<i>EIS Lead Graphic Designer</i>	MFA Painting BFA Painting Certificate of Web Authoring New York Artists' Equity	27
Mimi Sheridan MIMI SHERIDAN	<i>Historic Resources</i>	MUP specialization in historic preservation planning BA History and Political Science Society of Archtectural Historians Vernacular Architecture Forum AICP	12
David Sherrard PARMETRIX	<i>Visual Quality Visual Simulations Parks and Recreation Section 4(f)</i>	BA Geography AICP	29
Charles Smith <i>PE</i> ROSEWATER ENGINEERING, INC	<i>Pulic Services and Utilities</i>	BS Civil Engineering Professional Engineer (Washington)	17
Joel Soden PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Technical Direction and Quality Control</i>	MS MCE BCE	34
Lawrence Spurgeon PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Air Quality, Noise, Energy</i>	MSE Environmental Engineering BS	12
Kate Stenberg WSDOT	<i>Environmental Manager</i>	PhD Wildlife & Fisheries Science and Regional Planning MA Environmental Administration BA Biology – Environmental Studies	25
Don E. Weitkamp <i>PhD</i> PARAMETRIX	<i>Technical Lead Fisheries,Wildlife, and Habitat</i>	PhD Fisheries MS Invertebrate Pathology BS Zoology	34
Dana Wilk PARAMETRIX	<i>Environmental Team Project Coordinator</i>	BA	2
Steven Wolf PARSONS BRINCKERHOFF QUADE AND DOUGLAS	<i>Mechanical Noise Analysis Vibration and Technical Review</i>	BS Mathematics Graduate Work Applied Mathematics	31
Dawn B. Wulf SHANNON & WILSON	<i>Hazardous Materials</i>	MS Environmental Science – Hazardous Waste Option BA Geology Licensed Geologist (Washington) Licensed Hydrogeologist	19

INDEX PAGES

INDEX – Supplemental Draft EIS

A

Acquisitions 23, 34, 35, 65, 66, 106

Adverse effects 38, 70-71, 109

Air quality 68, 101, 107

Aquatic habitat 24, 33, 68-69, 71, 101-102, 104, 107, 109

Archaeological resources 14-15, 103, 113

B

Ballard Interbay Northend Manufacturing and Industrial Center 14, 30, 47, 49, 52, 89-91

Battery Street Tunnel 4-5, 6, 17, 18, 19, 41, 43, 44, 50, 52, 81
 curves widened 34, 35, 44, 51, 52, 66, 83, 92, 98, 99, 102

Belltown 23, 35, 59, 60, 98
 proposed development 111

Bicycles 30, 54-55, 92

Broad Street Detour 28, 32, 89, 90, 99

Burlington Northern Santa Fe Railway (BNSF)
 SIG Railyard 43

Businesses 14, 32, 33, 65, 66-67, 99-100, 104, 106

C

Colman Dock (*Also see* Ferries) 24, 33, 53, 68-69, 70, 109-111

Congested intersections 55-57

Construction

 costs 19-20
 durations 4, 25-29, 35, 72-74, 87-91
 noise 32, 33 97
 plans (*Also see specific*) 4, 25-26, 72-74
 traffic congestion 30-31, 92-95
 traffic restrictions 27-28, 84-85, 87-92

Construction Transporation Management Plan 31, 33, 39, 95-97, 104

Contaminated materials 33, 34, 102, 103, 104, 107

Controversial issues 38-39

Cultural resources 14-15, 104

Cumulative impacts 38, 109-112

D

Dewatering 81, 83, 102, 107

Duwamish industrial area 14, 52

E

Economics 32, 66-67, 99-100

Elliott Bay 24, 33, 68-70, 71, 102, 104, 107

Elliott Bay Seawall Project 111

Emergency services 67-68, 96, 101

Endangered species 68

Energy 113

Environmental Justice 14, 64, 98-99

Erosion 107

Excavation 75, 77-83, 103

F

Ferries 30, 53-54, 92
 Colman Dock Ferry Terminal access bridge 30, 76, 92

Fire

 safety 18
 suppression 67-68, 101

First Avenue Detour 11, 28, 32, 88, 89, 99

Fish 33, 68-69, 101-102, 104, 107
 steelhead 68

Freight 14, 30, 52-53, 66, 91

G

Geology: *See* Soils

Groundwater 103

H

Habitat: *See* Aquatic habitat

Hazardous waste 103, 107

Historic resources 23-24, 25, 35, 65-66, 71, 99, 104, 105, 106

I

I-405
 additional trips 94-95
 improvements 112
 temporary effects 31

I-5

 additional trips 94
 improvements 96, 112
 temporary effects 31

Indirect effects 112-113

Intermediate plan 4, 25, 35, 73, 87, 89, 91

Irretrievable resources 113

Irreversible decisions 113

K

Killer whale 68

L

Lake Union 102, 107

Land Use 61-63, 113

Link Light Rail 110

Longer plan 4, 25, 73, 88, 89, 91

Low-income popultions 14, 64, 98-99

Lowered Aurora 5-6, 34, 44, 51, 52, 55, 57, 59, 60-61, 63, 64, 65, 66, 67, 68, 70, 83, 98, 101, 102

M

Marbled murrelet 68

Mercer Corridor Project 110

Minority populations 14, 99

Mitigation

 permanent/opterational 25, 70-71, 109
 temproary/construction 33, 102, 103-107
 traffic management 31, 95-97

N

Neighborhoods 63-64, 98, 104, 105

No Build Alternative 9

Noise 20-21, 32, 33, 35, 57-59, 71, 97, 104, 105

O

Open space 21-22, 35, 55, 62-63, 98

P

Parking 24, 32, 33, 35, 66-67, 71, 96, 100, 104, 106

Parks 35, 63, 98, 105

Partially Lowered Aurora 5, 18, 20, 35, 43, 44, 50, 52, 58, 62, 64, 66, 81-83

Pedestrians 22, 30, 35, 54-55, 92

Police 67-68, 101

Project limits 3

Public coordination 13-14

Public services 67-68, 101, 106-107

Purpose and need 1-2, 3, 10, 122-123

R

Reconfigured Whatcom Railyard 17, 34, 41, 43, 46, 47, 48, 61, 70, 74, 75

Recreation 63, 98, 105

Relocated Whatcom Railyard 34, 43, 46, 47, 48, 62, 65, 66, 70, 76, 92, 102

Relocations

 properties 23, 34, 35, 65, 66, 106
 utilites 76, 101

Roadway deficiencies 1-2, 6, 12

Runoff 24-25, 33, 69-70, 71, 102, 107, 109

S

Safety 4, 5, 6, 9, 18, 35, 52, 55

Seattle Aquarium 97, 98, 105
 expansion project 111

Seattle Center 55

Secan pile seawall 79

Section 4(f) 15, 23-24, 35, 62, 65-66, 99, 104, 116-121

Secondary impacess: *See* Indirect effect

Shorter plan 4, 25, 72, 73, 74, 87, 89

Side-by-side tunnel 6, 34-35, 44, 65, 66, 69, 70, 80-81, 92, 101, 102

Slurry wall 79

Social resources 14, 64, 98, 105

SODO Ramps 41, 43, 47, 49, 52, 61, 65, 66, 67

Soil 70, 79, 103, 107
 improvements 45, 70, 75, 77, 102
 liquefaction 2

South Lake Union 55, 61

 development plans 112
 streetcar project 112

Spokane Street Viaduct Widening Project 110

SR 99 Over Elliott and Western 19, 34, 35, 44, 58, 59, 60, 65, 67, 77

SR 99 Under Elliott and Western 18, 35, 43, 59, 61, 65, 77

Stacked tunnel 18, 43, 78, 101

Steinbrueck Park Lid 34, 35, 44, 55, 57, 58, 60, 62, 63, 102

Steinbrueck Park Walkway 18, 35, 43, 54, 60, 61, 63, 64

Stormwater 24-25, 33, 69-70, 71, 102, 107, 109

T

Tail track 43

Threatened species 68

Traffic

 construction 27-31, 84-95
 operational 20, 47-57

Transit 30, 39, 53, 91, 96

Tribes 14-15, 104, 111

U

Utilities 34, 67-68, 76, 97, 101, 106-107

V

Vibration 97, 105

Views (visual resources) 21-23, 58-61, 62, 63, 97-98, 105, 113-114

W

Water quality 24-25, 33, 69-70, 71, 102, 104, 107, 109

Waterfront streetcar 18, 19, 21-22, 30, 43, 44, 53, 91

Whatcom Railyard 11

TECHNICAL TABLE OF CONTENTS



	<i>Cover Sheet</i>	<i>i</i>
	<i>Fact Sheet</i>	<i>ii</i>
CHAPTERS		
1	<i>Introduction</i>	1
1	Why was the Alaskan Way Viaduct and Seawall Replacement Project initiated?	1
2	Why do we need this project?	2
3	Who is leading this project?	3
4	Where is the project located?	3
5	What is the purpose of the Supplemental Draft EIS?	3
2	<i>Project Update</i>	9
1	What alternatives have been eliminated sine the Draft EIS was published?	9
2	What other things have changed sine the Draft EIS was published?	10
3	What have we heard from the public since the Draft EIS was published?	11

4	What opportunities have we provided for people to be engaged in the project?	13
3	<i>Summary</i>	17
1	What alternatives are evaluated in the Supplemental Draft EIS	17
2	How would the Tunnel Alternative replace SR 99 and the viaduct?	17
3	How would the Elevated Structure Alternative replace SR 99 and the viaduct?	19
4	How would the seawall be replaced?	19
5	How much would it cost to build the project?	19
6	What are the permanent transportation effects of the alternatives?	20
7	What are the other permanent effects of the alternatives?	20
8	How could permanent effects be mitigated?	25
9	What construction plans are evaluated in the Supplemental Draft EIS?	25
10	How are the construction plans evaluated in the Supplemental Draft EIS?	25
11	How would traffic on SR 99 and Alaskan Way be restricted during construction?	27
12	What other routes could drivers use during constructions?	28
13	How long would construction affect drivers on SR 99?	28
14	How would construction affect other trips?	30
15	How would construction affect traffic and congestion on other routes?	30
16	What would we do to keep people and traffic moving during construction?	31
17	What are the temporary construction effects of building the alternatives?	32
18	How could temporary construction effects be mitigated?	33
19	What other design choices are being considered?	34
20	What are the tradeoffs between design choices?	34
21	How would the construction of the viaduct and seawall and other downtown construction projects affect Seattle and surrounding areas?	38
22	What adverse effects of the project would not be mitigated?	38
23	What issues are controversial?	38
24	What issues remain to be resolved?	39
25	What are the next steps?	39
4	<i>The Alternatives</i>	41
1	What alternatives are evaluated in this document?	41
2	How would the Tunnel Alternative replace SR 99 and the viaduct?	41
3	What other design choices are being considered for the Tunnel Alternative?	43
4	How would the Elevated Structure Alternative replace SR 99 and the viaduct?	44

5	What other design choices are being considered for the Elevated Structure Alternative?	44
6	How would the seawall be replaced?	44
5	<i>Project Effect</i>	47
1	How would the alternatives change conditions for vehicles, biyclists, and pedestrians?	47
2	How would the alternatives affect traffic?	55
3	Would noise levels increase?	57
4	How would views be affected?	59
5	How would land use be affected?	61
6	How would parks, recreation, and open space be affected?	63
7	How would neighborhoods be affected?	63
8	How would community and social services be affected?	64
9	How would low-income populations be affected?	64
10	How would the alternatives affect properties located in the area?	65
11	How would historic properties be affected?	65
12	How would the local and regional economy be affected?	66
13	How would public services (such as police and fire) and utilities be affected?	67
14	How would air quality be affected?	68
15	How would fish and aquatic habitat be affected?	68
16	How would water resources be affected?	69
17	How would soil conditions change once the project is built?	70
18	How would we develop mitigation plans for the project, and what types of mitigation measures could be utilized?	70
6	<i>Construction</i>	73
1	What construction plans are evaluated in this document?	73
2	How are the construction plans evaluated in this document?	73
3	How were the construction durations for the project developed?	74
4	How would construction activities be sequenced?	74
5	How would the project be built in the south section?	74
6	How would the project be built in the central section?	76
7	How would the project be built in the north section??	81
7	<i>Construction Effects</i>	85
1	How would traffic on SR 99 and Alaskan Way be restricted during construction?	85
2	How would construction affect roadway capacity on SR 99?	85
3	What other routes could drivers use during construction?	86
4	How long would construction affect drivers on SR 99?	87
5	How would construction affect other trips?	91
6	How would construction affect traffic and congestion on other routes?	92
7	What would we do to keep people and traffic moving during construction?	95
8	How would noise during construction affect surrounding areas?	97

9	Would vibration during construction affect surrounding areas?	97
10	How would views be affected during construction?	97
11	How would parks, recreation, and open space be affected during construction?	98
12	How would neighborhoods be affected during construction?	98
13	How would community and social services be affected during construction?	98
14	How would low-income populations be affected during construction?	98
15	How would historic properties be affected during construction?	99
16	How would the local and regional economy be affected during construction?	99
17	How would public services and utilities be affected during construction?	101
18	How would air quality be affected during construction?	101
19	How would fish and aquatic habitat be affected during construction?	101
20	How would water resources be affected during construction?	102
21	How would soil and contaminated materials be affected curing construction?	103
22	Would construction affect archaeological resources?	103
23	How would we develop construction mitigation plans for the project?	103
24	What types of mitigation measures could be utilized to minimize construction effects?	105
8	<i>Other Things to Consider</i>	109
1	What are cumulative effects, and why do we study them?	109
2	What are possible cumulative effects?	109
3	What other projects are underway or planned in or near Seattle?	110
4	What are indirect effects, and does the project have any?	112
5	What irreversible decisions or irretrievable resources would be committed to building the project?	113
6	What are the tradeoffs between short-term uses of environmental resources and long-term gains (or productivity) from the project?	113

TECHNICAL TABLE OF CONTENTS (*continued*)

List of Exhibits

Exhibit 1-1	Viaduct and Seawall Vulnerabilities	1
Exhibit 1-2	Project Limits	3
Exhibit 1-3	Design Changes to the Alternatives	5
Exhibit 2-1	Comparison of Viaduct Replacement Structures	8
Exhibit 2-2	Aerial Structure Widths along the Central Waterfront	9
Exhibit 3-1	Alternatives Evaluated in the Supplemental Draft EIS	17
Exhibit 3-2	Table of Choices	17
Exhibit 3-3	The Alternatives	16
Exhibit 3-4	Alaskan Way Cross-Sections	18
Exhibit 3-5	Rebuilt Seawall - Union to Broad	19
Exhibit 3-6	Project Cost Ranges	20
Exhibit 3-7	Core Elements of the Tunnel and Elevated Structure Alternatives	20
Exhibit 3-8	SR 99 Peak Hour Speeds	20
Exhibit 3-9	Noise Levels for Each Alternative	21
Exhibit 3-10	Visual Simulations Looking Southeast from Yesler Way	22
Exhibit 3-11	Visual Simulations Looking South from Union Street	23
Exhibit 3-12	Parcels Acquired for the Alternatives	23
Exhibit 3-13	Project Parking Effects	24
Exhibit 3-14	Changes to Elliott Bay at S. Washington Street	24
Exhibit 3-15	Construction Plans Fully Evaluated in the Supplemental Draft EIS	25
Exhibit 3-16	Construction Activities Chart	26
Exhibit 3-17	Construction Roadway Closures, Restrictions, and Detours	27
Exhibit 3-18	SR 99 Roadway Closures and Restrictions During Construction	27
Exhibit 3-19	SR 99 Ramp Closures During Construction	28
Exhibit 3-20	SR 99 Traffic Accommodated During Construction	29
Exhibit 3-21	Alaskan Way Roadway Closures and Restrictions During Construction	28
Exhibit 3-22	Duration of Effects to SR 99 Drivers Heading To, From, or Through Downtown	29
Exhibit 3-23	Duration of Effects to Drivers Heading To or From Ballard and Interbay	29
Exhibit 3-24	Duration of Transit Effects During Construction	30
Exhibit 3-25	Typical Sound Levels	32
Exhibit 3-26	Parking Areas Removed During Construction	32
Exhibit 3-27	Steinbrueck Park Walkway and Lid	36
Exhibit 3-28	SR 99 at Elliott and Western	37
Exhibit 4-1	Alternatives Evaluated in the Supplemental Draft EIS	41
Exhibit 4-2	Table of Choices	41
Exhibit 4-3	Tunnel Alternative	40

Exhibit 4-4	Elevated Structure Alternative	42
Exhibit 4-5	Rebuilt Seawall - Union to Broad	45
Exhibit 5-1	Tunnel South Section Choices	46
Exhibit 5-2	Elevated Structure South Section Choices	48
Exhibit 5-3	Alaskan Way Cross-Sections	49
Exhibit 5-4	Partially Lowered Aurora	50
Exhibit 5-5	Lowered Aurora	51
Exhibit 5-6	SR 99 Peak Hour Speeds	55
Exhibit 5-7	Congested Intersections	56
Exhibit 5-8	Noise Levels for Each Alternative	57
Exhibit 5-9	Visual Simulations Looking Southeast from Yesler Way	58
Exhibit 5-10	Visual Simulations Looking South to Main Street	59
Exhibit 5-11	Steinbrueck Park Walkway Visual Simulation	60
Exhibit 5-12	SR 99 Under Elliott and Western	61
Exhibit 5-13	Visual Simulations Looking South from Union Street	62
Exhibit 5-14	Visual Simulations Looking West from University Street	63
Exhibit 5-15	Parcels Acquired for the Alternatives	65
Exhibit 5-16	Parking Effects	67
Exhibit 5-17	Changes to Elliott Bay at S. Washington Street	69
Exhibit 6-1	Construction Plans Fully Evaluated in this Document	74
Exhibit 6-2	Construction Activities Chart	72
Exhibit 6-3	Deep Soil Mixing	74
Exhibit 6-4	Jet Grouting	76
Exhibit 6-5	Rebuilt Seawall - Union to Broad	77
Exhibit 6-6	Stacked Tunnel Construction	78
Exhibit 6-7	Side-by-Side Tunnel Construction	80-81
Exhibit 6-8	Elevated Structure Construction	82
Exhibit 7-1	Construction Roadway Closures, Restrictions, and Detours	84
Exhibit 7-2	SR 99 Roadway Closures and Restrictions During Construction	85
Exhibit 7-3	SR 99 Ramp Closures During Construction	85
Exhibit 7-4	Alaskan Way Roadway Closures and Restrictions During Construction	85
Exhibit 7-5	SR 99 Traffic Accommodated During Construction	86
Exhibit 7-6	Duration of Effects to SR 99 Drivers Heading To or From Downtown	87
Exhibit 7-7	First Avenue S. Detour	88
Exhibit 7-8	Duration of Effectst to SR 99 Drivers Heading Through Downtown	88
Exhibit 7-9	Broad Street Detour	90
Exhibit 7-10	Duration of Effects to Drivers Heading To or From Ballard and Interbay	89
Exhibit 7-11	Duration of Transit Effects During Construction	91
Exhibit 7-12	Increases in Daily Traffic on Streets West of I-5 During SR 99 Construction	93
Exhibit 7-13	Increases in Daily Traffic on I-5 During SR 99 Construction	94

Exhibit 7-14	Increases in Daily Traffic on City Streets East of I-5 During SR 99 Construction	95
Exhibit 7-15	Typical Sound Levels	97
Exhibit 7-16	Parking Removed during Construction of Either Alternative	100
Exhibit 7-17	Parking Area Removed During Construction	100
Exhibit 7-18	Amounts of Spoils Compared to Draft EIS	102
Exhibit 7-19	Estimated Volume of Excavated and Contaminated Material for the Alternatives	103
Exhibit 7-20	Difference in the Amount of Excavated and Contaminated Material for the Design Choices	103
Exhibit 8-1	Major Downtown Transportation Construction Projects	110

REFERENCE PAGES

<i>SECTION 4(f) EVALUALTION</i>	117
---------------------------------	-----

<i>PURPOSE AND NEED STATEMENT</i>	122
-----------------------------------	-----

<i>LIST OF APPENDICES</i>	123
---------------------------	-----

<i>ACRONYMS</i>	124
-----------------	-----

<i>DISTRIBUTION LIST</i>	124
--------------------------	-----

<i>REFERENCES</i>	126
-------------------	-----

<i>LIST OF PREPARERS</i>	126
--------------------------	-----

<i>INDEX</i>	130
--------------	-----

<i>TECHNICAL TABLE OF CONTENTS</i>	132
------------------------------------	-----

<i>TECHNICAL INDEX</i>	134
------------------------	-----

<i>COMMENT FORM</i>	LAST PAGE
---------------------	-----------

TECHNICAL INDEX	Chapter 1 Introduction	Chapter 2 Project Update	Chapter 3 Summary	Chapter 4 The Alternatives	Chapter 5 Project Effects	Chapter 6 Construction	Chapter 7 Construction Effects	Chapter 8 Other Things to Consider	Reference
Subject									
Alternatives Description			17-19	41-45					
Alternatives Development	4-6	9-13	17-19	41-45					
Alternatives Not Considered in Detail		9-10							
Areas of Controversy		38							
Cumulative and Indirect Effects								109-114	
Irreversible Decisions & Irretrievable Resources								113	
Issues to be Resolved		39							
Logical Termini	3								
No Build Alternative		9							
Public Involvement		13-15							
Purpose and Need		10							122-123
Section 4(f)		15	23-24, 25	62, 65-66		99, 104			116-121
Short-Term Resource Uses & Long-Term Gains of Project								113-114	
Unavoidable Adverse Effects		38							
Affected Environment, Impacts, and Mitigation (alphabetical order)									
Air Quality					68		101, 107		
Archaeological & Cultural Resources		14-15					103, 104		
Contaminated Materials			33-34				103, 104, 107		
Economics			32		66-67		99-100, 104, 106		
Energy								113	
Environmental Justice		14			64		98-99		
Fish and Wildlife			33		68-69		101-102, 104, 107		
Geology and Soils					70		103, 107		
Groundwater							103		
Historic Resources			23-24, 25		65-66		99, 104, 106		
Land Use					61-63			113	
Noise			20-21, 32, 33		57-59, 71		97, 104, 105		
Parks and Recreation					63		98, 105		
Public Services and Utilities					67-68	76	101, 106-107		
Relocations			23, 34, 35		65-66		106		
Social Resources (neighborhoods)					63-64		98, 104, 105		
Transportation									
Access					47-55				
Ferries			30		53-54		92		
Bicycles			30		54-55		92		
Pedestrians			22, 30		54-55		92		
Freight			30		52-53, 66		91		
Transit			30, 39		53		91, 95-96		
Parking			24, 32, 33, 35		66-67, 71		96, 100, 104, 106		
Vibration							97, 105		
Visual Quality			21-23		58-61, 62, 63		97-98, 105	113-114	
Water Quality and Sediments			24-25, 33		69-70, 71		102, 104, 107	109	

COMMENT FORM

All comments must be received by September 22, 2006

Use the form on this page to send your comments on this Supplemental Draft EIS to the lead agencies. All comments received by September 22, 2006 will have a response in the Final EIS. Additional comments, or if the form has already been used, should be sent to:

WSDOT
Attn: Kate Stenberg, AWV Environmental Manager
AWV Project Office (Wells Fargo Building)
999 Third Avenue S., Suite 2424
Seattle, WA 98104-4019

Comments can also be sent by email to:

awvsdeiscomments@wsdot.wa.gov

Alaskan Way Viaduct and Seawall Replacement Project Supplemental Draft EIS
Comment Form

Please use this form to give us comments on the Supplemental Draft Environmental Impact Statement (EIS) for the Alaskan Way Viaduct and Seawall Replacement Project. The comments you make will become part of the public record for this project. Responses to your comments will be provided in the Final EIS.

Contact Information
At a minimum, please provide your name and zip code. If you would like to be added to the project mailing list, please fill out the rest of the contact information and check the box below.
☐ Check here if you would like to be added to the project mailing list.

Name

Address

City State Zip

Email

Organization/Membership Affiliations (optional)

- Choose a topic
- | | | |
|--|---|--|
| <input type="checkbox"/> Overall Project | <input type="checkbox"/> Elevated Structure Alternative | <input type="checkbox"/> Construction Impacts & Mitigation |
| <input type="checkbox"/> All of the Alternatives | <input type="checkbox"/> Design Choices | <input type="checkbox"/> Traffic Impacts & Mitigation |
| <input type="checkbox"/> Tunnel Alternative | <input type="checkbox"/> Seawall | <input type="checkbox"/> Other |

What are your comments about the Project?

- Your answers to the questions below will let the agencies know if the Supplemental Draft EIS format was helpful. Your answers

1. Is this the first EIS you have read?

☐ Yes☐ No

2. Have you previously participated in public meetings/ comment periods related to the AWV project?

☐ Yes☐ No

3. Did you find this Supplemental Draft EIS format easy to understand?

☐ Yes☐ No

Why or why not?

to these questions are not part of the EIS process and they will not receive a response.

4. Did the graphics help make the Supplemental Draft EIS easier to review and understand

☐ Yes☐ No

5. Did you refer to the technical appendices?

☐ Yes☐ No

6. What did or didn't you find helpful when reading this Supplemental Draft EIS?

Place
Stamp
Here

WSDOT
Attn: Kate Stenberg, AWV Environmental Manager
AWV Project Office (Wells Fargo Building)
999 Third Avenue S., Suite 2424
Seattle, WA 98104- 4019